

Additions to the checklist of Bombycoidea and Noctuoidea of the Volgo-Ural region. Part II. (Lepidoptera: Lasiocampidae, Erebidae, Nolidae, Noctuidae)

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Received May 2011; reviews returned September 2011; accepted 13 December 2011.

Subject Editor: Lauri Kaila.

Abstract. Faunistic records additional to the recently published lists of Bombycoidea and Noctuoidea of the South Ural Mountains (Nupponen & Fibiger 2002, 2006) are presented, as well as some interesting records from the North Urals and the Lower Volga region. The material in the southern Urals was collected during 2006–2010 in six different expeditions, in North Ural in 2003 and 2007, and in the Lower Volga region in 2001, 2002, 2005, and 2006 in four expeditions. Four species are reported for the first time from Europe: *Dichagyris latipennis* (Püngeler, 1909), *Pseudohermonassa melancholica* (Lederer, 1853), *Spaerlotis deplorata* (Staudinger, 1897), and *Xestia albonigra* (Kononenko, 1981). Fourteen species are reported for the first time from the southern Urals. Altogether, records of 68 species are reported, including a few corrections to the previous articles. Further illustrations and notes on some poorly known taxa are given.

Introduction

The fauna of Bombycoidea and Noctuoidea of the southern Ural Mountains has been studied intensely since 1996, and the results of the research during 1996–2005 were published by Nupponen & Fibiger (2002, 2006). Since 2005, several further expeditions were made to the Urals by the first author. The results of these trips are summarized in the present paper, as well as some noteworthy records from the Lower and Middle Volga region.

Material and Methods

The present article is based on the material collected by Kari Nupponen during 2006–2010 on six different expeditions to the southern Urals, four expeditions to the Lower and Middle Volga region in 2001, 2002, 2005 and 2006, and two short trips to the North Urals in 2003 and 2007. A few specimens recorded by Vladimir Olschwang, Pavel Gorbunov, and other collectors are included as well. The fieldwork comprised 48 days in the southern Ural, and 32 days in the Lower and Middle Volga region. The dates and areas visited on each of the trips are as follows:

(a) South Ural

- 1: 16.viii.–23.viii.2006; Orenburg oblast, Cheliabinsk oblast, Sverdlovsk oblast; K. Nupponen.
- 2: 8–23.vii.2007; Cheliabinsk oblast, Sverdlovsk oblast, Bashkiria; K. Nupponen.
- 3: 2–11.x.2007; Orenburg oblast, Cheliabinsk oblast, Sverdlovsk oblast; K. Nupponen.
- 4: 4–12.ix.2009; Orenburg oblast, Cheliabinsk oblast; K. Nupponen & P. Gorbunov.

- 5: 21–22.v.2010 & 25–26.v.2010; Cheliabinsk oblast, Sverdlovsk oblast; K. Nupponen & P. Gorbunov.
 6: 14.ix.2010; Orenburg oblast; K. Nupponen & P. Gorbunov.

(b) The Lower and Middle Volga region

- 1: 29.v.–6.vi.2001; Saratov oblast, Volgograd oblast, Astrahan oblast; K. Nupponen.
 2: 1–8.ix.2002; Saratov oblast, Volgograd oblast; K. Nupponen.
 3: 14–19.v.2005; Saratov oblast, Volgograd oblast; K. Nupponen.
 4: 25.viii.–02.ix.2006; Saratov oblast; Volgograd oblast, Astrahan oblast; K. Nupponen.

(c) North Ural

Two short trips were made during 10–11.vii.2003 and 10–14.vii.2007. The material was mainly collected by artificial light at night. Sugar ropes (sisal ropes soaked in red wine and sugar) were used in the second half of the summer, and some day-active species were recorded by netting during daytime. The collected material is generally deposited in the private collection of T. & K. Nupponen.

Collecting sites

The collecting localities are listed below. Brief variations of locality names are given in uppercase letters before each locality and used later in the species list. The localities are grouped regionally. For further information of the localities, see Nupponen & Fibiger (2002).

Collecting sites in South Ural

- BOGDANOVKA: Cheliabinsk oblast, 52°24'N 64°04'E, 280 m, Ural River bank by Bogdanovka Village. 21–22.v.2010.
 BURANNOE: Orenburg oblast, 50°58'N 54°25'E, 100 m, near Burannoe Village, Ilek River Valley. 18–19.viii.2006.
 CHALK HILLS: Orenburg oblast, 50°40'–45'N 54°26'–28'E, 170–230 m, Pokrovka Village 20 km S, Schibendy Valley. 20–22.viii.2006, 05–10.x.2007.
 GUBERLJA: Orenburg oblast, 51°09'–12'N 58°02'–08'E, 320 m, Orsk 40 km W, near Guberlja Village. 09.ix.2009.
 GUBERLJA SPRING: Orenburg oblast, 51°09'N 58°03'E, 330–360 m, Orsk 40 km WSW, spring near Gubrlja River. 07–08.ix.2009.
 IREMEL: Cheliabinsk oblast, 54°31'–35'N 58°49'–54'E, 900–1580 m, Iremel Mountains. 18–19.vii.2007.
 KAMENKA: Cheliabinsk oblast SW, 52°31'–32'N 59°03'–04'E, 275–380 m, Ural River near Kamenka Village. 12.ix.2009.
 KIZILSKOYE: Cheliabinsk oblast, 52°39'N 59°00'E, 300 m, Kizilskoye 15 km S, near Ural River. 11.x.2007.
 KUMAK RIVER: Orenburg oblast, 51°14'–18'N 59°02'–22'E, 215–270 m, Kumak River. 10–11.ix.2009, 14.ix.2010.
 KUZINO: Sverdlovsk oblast, 57°00'N 59°26'E, 320 m, Kuzino Village. 25–26.v.2010.
 MIASS: Cheliabinsk oblast, 55°01'N 60°06'E, 350 m, Miass, Ilmen State reserve. 16–19.vii.2007.
 MOSKOVO: Cheliabinsk oblast, 53°57'N 59°03'E, 650 m, near Moskovko Village. 16.viii.2006, 16–17.vii.2007.
 ORENBURG: Orenburg oblast, 51°43'N 54°54'E, 95 m, Orenburg city SW. 04.x.2007.
 SOROCHINSK: Orenburg oblast W, 52°26'–29'N 53°10'–12'E, 200 m, Sorochinsk Village 5 km N. 23.viii.2006.
 UCHALY II: Cheliabinsk oblast, 54°04'–10'N 59°35'–44'E, 440–580 m, Uchaly Village 25 km SE. 04.ix.2009.

VERBLJUSHKA: Orenburg oblast, 51°23'N 56°49'E, 130–340 m, Donskoje Village 6 km W, Mount Verbljushka. 17.viii.2006, 03.x.2007, 05–06.ix.2009.

Collecting sites in the Lower and Middle Volga region

OLHOVKA: Volgograd oblast, 49°34–41'N 44°16–19'E, 60–120 m, Olhovka Village 20 km SW. 01.vi.2001, 05–06.vi.2001, 03–04.ix.2002, 06–07.ix.2002, 15.v.2005, 18.v.2005, 25.viii.2006.

BOGDO: Astrakhan oblast, 48°07–11'N 46°48–54'E, -20–150 m, Baskunzak salt lake SW, Bogdo. 04.vi.2001, 26–28.viii.2006.

BASKUNZAK W: Astrakhan oblast, 48°10–13'N 46°33–38'E, 0–10 m, Baskunzak salt lake 20 km W. 03.vi.2001.

SASYKOLI: Astrakhan oblast, 47°34'N 47°01'E, -9–5 m, Sasykoli Village 3 km NE, Peski Voniutchie. 29–30.viii.2006.

PESKI THIKILI: Astrakhan oblast, 48°02–03'N 46°37–40'E, 5–10 m, Peski Thikili near Bogdo Village. 30.viii.2006.

FROLOVO: Volgograd oblast, 49°33–38'N 43°16–28'E, 95–110 m, Frolovo Village 30 km SW. 16–17.v.2005.

ILOVLA: Volgograd oblast, 49°13–26'N 43°41–56'E, 45–65 m, Ilovla Village 10 km WSW. 02.vi.2001, 05.ix.2002.

PUGATSEV N: Saratov oblast N, 52°06'N 49°04'E, 45 m, Pugatsev Village 22 km N. 01.ix.2006.

PUGATSEV: Saratov oblast, 52°02'N 49°04'E, 35 m, near Pugatsev Village. 02.ix.2002.

BANNOVKA: Saratov oblast S, 50°44'N 45°37'E, 150 m, near Nizhnaja Bannovka Village. 31.viii.2006.

Checklist

The systematics follow that of Zahiri et al. (2011) and nomenclature that of Fibiger & Hacker (2005). The dates and localities of records for each species are given, as well as further notes on some poorly known species. The present list includes only additions and corrections to our previous reports from South Ural (Nupponen & Fibiger 2002, 2006), and additionally some noteworthy records from the Lower and Middle Volga region and northern half of the Ural Mountains. Records of widely distributed taxa are generally excluded, as well as further observations from localities where the species was previously known. The species included in the list were either recorded as new since our previous reports (marked by an asterisk [*]), or recorded in the new areas located considerably to the north (Sverdlovsk and Cheliabinsk oblasts) or to the south (Orenburg oblast) from earlier records. Further records of some species and second generations are included too, as well as a few earlier reported but incorrectly determined taxa.

Lasiocampidae

* *Dendrolimus kilmez* Mikkola & Ståhls, 2008

Miss 28.vi.1997 2♂

Distribution. Central Russia (Udmurtia, republic of Mari El, C Ural).

Remarks. The two specimens are included in the type series. Three species of *Dendro-*

limus occur in Miass: *D. pini* (Linnaeus, 1758), *D. sibiricus* Tshetverikov, 1908 and *D. kilmez*. For further information, see Mikkola & Ståhls (2008).

*** *Phyllodesma japonicum* (Leech, 1889)**

Kuzino 25.v.2010 1 ♂

Remarks. The specimen from Ural is externally similar to those from Estonia (ssp. *arbo-reum* Blöcker, 1908). New to the Ural region.

Erebidae

***Schrankia balneorum* (Alphéraky, 1880)**

Bogdo 28.viii.2006 1 ♀; Burannoe 18–19.viii.2006 25 exx; Chalk Hills 20–22.viii.2006 15 exx; Peski Thikili 30.viii.2006 1 ♂; Pugatsev N 01.ix.2006 6 exx

Remarks. The habitat of *S. balneorum* in Burannoe is illustrated in Fig. 1.

***Eublemma debilis* (Christoph, 1884)**

Bogdo 26–28.viii.2006 3 ♂

Remarks. In addition to the present records, only two further specimens of *E. debilis* are known from Europe (Fibiger et al. 2010). Two of the specimens from Bogdo are illustrated in Fibiger et al. (2010: plate 4, figs 35, 37). The habitat of *E. debilis* in Bogdo is a desert steppe at the shore of Baskunzak salt lake (Fig. 2). In W Kazakhstan, the species inhabits semideserts and, contrary to Fibiger et al. (2010), occurs in two generations, of which the first one is flying in May and early June and is more abundant (K. Nupponen & P. Gorbunov, unpublished).

***Rhynchodontodes ravulalis* (Staudinger, 1879)**

Burannoe 18–19.viii.2006 15 exx

Remarks. The habitat of *R. ravulalis* in Burannoe is illustrated in Fig. 1.

***Hypena opulenta* (Christoph, 1877)**

Ilovla 5.ix.2002 1 ♂

***Drasteria flexuosa* (Ménétriés, 1848)**

Bogdo 26.viii.2006 1 ♂, 1 ♀; Sasykoli 29.viii.2006 1 ♂

***Drasteria picta* (Christoph, 1877)**

Sasykoli 29.viii.2006 about 40 exx

***Euclidia fortalitium* (Tauscher, 1809)**

Bogdo 27.viii.2006 1 ♀; Burannoe 18.viii.2006 1 ♀; Chalk Hills 22.viii.2006 1 ♂; Frolovo 16.v.2005 1 ♀; Kizilskoye 19–20.v.2007 2 ♂ (P. Gorbunov leg.)



Fig. 1. Sandy steppe and moist patches with plenty of *Salix* and *Populus* by Burannoe Village, South Ural. Habitat of *Schranksia balneorum*, *Rhynchodontodes ravulalis*, *Nycteola kuldzhana*, and *Cucullia inderiensis* (Photo: K. Nupponen).

Remarks. The main flight period of *E. fortalitium* is July in the southern Urals, while the species is clearly bivoltine in the Lower Volga region (Nupponen & Fibiger 2002; Goater et al. 2003). However, two specimens collected in mid-May in Kiziskoye might indicate that some populations are bivoltine in the Urals too. The two specimens are dark and very small in size, possibly due to abnormal conditions during their larval stage.

***Pericyma albidentaria* (Freyer, 1842)**

Bogdo 4.vi.2001 1♂, 26–27.viii.2006 6 exx; Peski Thikili 30.viii.2006 3♂; Sasykoli 29.viii.2006 2♂

*** *Clytie gracilis* (A. Bang-Haas, 1907)**

Baskunzak W 3.vi.2001 1♂; Chalk Hills 22.viii.2006 1♂; Sasykoli 29.viii.2006 1♂, 1♀

***Dysgonia rogenhoferi* (Bohatsch, 1880)**

Sasykoli 30.viii.2006 1♂

Remarks. The specimen from Sasykoli is illustrated in Fibiger et al. (2010: pl. 16, fig. 29), and the collecting site in Fig. 3. The present record is the second one of the species from Europe (see Fibiger et al. 2010).

***Dysgonia algira* (Linnaeus, 1767)**

Ilovla 5.ix.2002 1♂

Remarks. The species occurs only as a migrant in the Volgo-Ural region.



Fig. 2. Desert steppe and rocky slopes of the Bogdo Hill by Baskunzak salt lake, Astrakhan oblast. Habitat of *Eublemma debilis*, *Scythocentropus misella*, *Luperina taurica*, *Pseudohadena schlumbergeri*, *Euxoa deserta*, and *Euxoa fallax* (Photo: K. Nupponen).

***Prodotis stolidus* (Fabricius, 1775)**

Olhovka 4.ix.2002 1 ex, 7.ix.2002 1 ex

Remarks. The species occurs only as a migrant in the Volgo-Ural region.

***Pararctia tundra* (Tshistjakov, 1990)**

Polar Ural, Voikar River, vii.2008 1♂ (M. Golovatin leg.; coll. T. & K. Nupponen)

Remarks. *P. tundra* occurs in the arctic regions of the Eastern Palaearctic area. The western boundary of the species distribution is in the Polar Ural.

***Borearctia menetriesii* (Eversmann, 1846)**

North Ural, 60°28'N 59°40'E, 260 m, Denetshkin Kamen (N slope, taiga forest) 20.vii.2005 1♀ (A. Erma-kov leg.; coll. T. & K. Nupponen)

Remarks. A dead female of *B. menetriesii* was found on a branch of *Picea*, where its left forewing was apparently fixed after emerging. The habitat is a taiga forest, with limited luxurious meadows and a small river in a forest (Figs 4, 5).

Nolidae

*** *Nycteola eremostola* Dufay, 1961**

Chalk Hills 26.ix.2005 1♂; Kumak River 10.ix.2009 1 ex, 11.ix.2009 1 ex



Fig. 3. Sandy desert with *Calligonum* and patches of *Salix* by Sasykoli Village near the River Volga, Astrakhan oblast. Habitat of *Dichagyris latipennis* and *Dysgonia rogenhoferi* (Photo: K. Nupponen).

Remarks. Earlier reports of *Nycteola siculana* (Fuchs, 1899) from southern Urals refer to *N. eremostola* (see Nupponen & Fibiger 2002, 2006; Fibiger et al. 2009). In addition to ‘normal’ greyish specimens (see Fibiger et al. 2009), there also exists a colour form with reddish brown costal half of medial area of the forewings (Fig. 6).

*** *Nycteola kuldzhana* Obraztsov, 1953**

Burannoe 18.viii.2006 2♂, 19.viii.2006 4♂, 1♀

Remarks. One of the specimens from South Ural is illustrated in Fibiger et al. (2009: pl. 7, fig. 63). For further notes on this species, see Fibiger et al. (2009). The habitat of *N. kuldzhana* in Burannoe is illustrated in Fig. 2.

Noctuidae

***Trichosea ludifica* (Linnaeus, 1758)**

North Ural, 60°28'N 59°40'E, 260 m, Denetshkin Kamen (N slope) 13.vii.2007 1♂

***Cucullia mixta* Freyer, 1842**

Chalk Hills 8.x.2007 1♂

Remarks. The specimen was newly emerged. First record of the second generation of this species in the Urals.

***Sympistis nigrita* (Boisduval, 1840)**

North Ural, 60°24–26'N 59°29–36'E, 1000–1250 m, Denetshkin Kamen, mountain tundra, 12.vii.2007 1♂, 4♀; 13.vii.2007 1♂, 1♀; North Ural, 59°30–32'N 59°09–11'E, 600–1519 m, near Kytlym Village, Kosvinskij Kamen 11.vii.2003 1♀

***Oncocnemis senica* (Eversmann, 1856)**

Moskovo 16.viii.2006 1♂

***Caradrina expansa* (Alphéraky, 1887)**

Burannoe 19.viii.2006 1♀; Bogdo 26.viii.2006 2♂, 2♀; 27.viii.2006 2♂, 1♀; Chalk Hills 22.viii.2006 1♀; Sasykoli 29.viii.2006 1♂, 2♀; Pugatsev N 01.ix.2006 4♂, 6♀

Remarks. *C. expansa* was recently reported from Europe (Nupponen & Fibiger 2006). In 2006, the species was discovered in several localities in Astrakhan and Saratov provinces and South Ural. The species is possibly widely distributed, but may also have been overlooked in the Lower Volga region. In 2009–2011, *C. expansa* was also discovered in several localities in the Ustyurt Plateau and the Emba River basin, western Kazakhstan (P. Gorbunov & K. Nupponen, unpublished).

***Caradrina inumbrata* (Staudinger, 1900)**

Guberlja Spring 7.ix.2009 2♂, 8.ix.2009 2♂

Remarks. *C. inumbrata* was recently reported as new to Europe (Hacker 2004; Nupponen & Fibiger 2006). The present records confirm that the species is resident in the southern Ural area.

***Scythocentropus misella* (Püngeler, 1908)**

Bogdo 26.viii.2006 about 100 exx

Remarks. *S. misella* was abundant on xerothermic and rocky southern slopes of the famous Bogdo Hill (Fig. 1). However, we did not record the species anywhere in adjacent areas in Astrakhan oblast, despite collecting several nights in very good weather conditions.

***Chloantha hyperici* ([Denis & Schiffermüller], 1775)**

Olhovka 18.v.2005 3♂

***Oxytrypia orbiculosa* (Esper, [1799])**

Chalk Hills 6–9.x.2007 2♂; Kumak River 10.ix.2009 1♂

***Mesapamea moderata* (Eversmann, 1843)**

Burannoe 19.viii.2006 1♀; Olhovka 4.ix.2002 1♀, 6.ix.2002 1♀, 7.ix.2002 1♀

***Luperina taurica* (Kljutschko, 1967)**

Bogdo 28.viii.2006 1♂ (GP 5578 MF); Olhovka 25.viii.2006 1♂; Peski Tshikili 30.viii.2006 1♂



Figs 4, 5. Taiga forest at the northern slope of Denetshkin Kamen, North Ural. Habitat of *Borearctia menestriesii*, *Xestia albonigra*, and *Xestia subgrisea* (Photo: K. Nupponen).

Remarks. The species occurs in the southernmost provinces of southwestern Russia (Matov et al. 2008). The present records are the northernmost ones known. New to Astrakhan and Volgograd oblasts. The habitats of *L. taurica* in the Lower Volga region are desert steppes (Fig. 1).

***Fabula zollikoferi* (Freyer, 1836)**

Guberlja Spring 7.ix.2009 1♀, 8.ix.2009 1♂, 1♀; Kamenka 12.ix.2009 1♀; Kumak River 10.ix.2009 3♀, 11.ix.2009 5♂, 8♀

Remarks. In September 2009, the first author was studying the bionomics of *F. zollikoferi* in new localities in the southern Ural region. The species was discovered in three different localities, all of them being wetlands on the riverside or moist patches in steppes, with plenty of *Phragmites australis* and surrounded by large steppes (Figs 7, 8). As the species was recorded in all habitats where *Phragmites* was growing, but nowhere else, it seems clear that the species is breeding in such moist areas in steppe belt of the southern Urals. Further records of *F. zollikoferi* from western Kazakhstan in September, 2010 support this conclusion as well (K. Nupponen & P. Gorbunov, unpublished). *F. zollikoferi* was recently reared on stems of *Phragmites* (Ahola & Silvonon 2011), which is probably the main host plant in nature. As the larva lives in the stem, at least in its early stages, the species seems to prefer localities where stems of *Phragmites* are thick and do not grow in the water, as they are in all the three localities mentioned above and in the other two localities where the species is known to occur in the southern Urals (see Nupponen & Fibiger 2002, 2006). The moth is a strong flyer. The flight continues over the night, with a peak around midnight. The behaviour of the moth is quite peculiar. After landing – usually far from the light, it typically stays there



Fig. 6. Different forms (females) of *Nycteola eremostola* Dufay, 1961; South Ural, Schibendy Valley, 23.vi.1999, K. Nupponen leg.

or sometimes jumps once or twice before staying, and becomes active again just before sunrise, and then hides during the day. Such type of behaviour evidently decreases the probability of capturing the species in light traps.

The expected imaginal summer diapause (Nupponen & Fibiger 2002; Zilli et al. 2005) is not confirmed, as suitable habitats have not been investigated in the first part of the summer. However, the story in Zilli et al. (2005, p. 81) is incomplete. In the River Ajat, three specimens of *zollikoferi* were collected in early July 1997. In late July 1998, the species was not recorded there, despite very good weather conditions. However, the same locality was visited again during the 'normal' flight period of *zollikoferi* in September 2000, and 11 specimens were collected during two nights. It is hard to believe that it happened just by chance, particularly because there were no signs of migration in any of the three visits. In May 2011, one female specimen of *F. zollikoferi* was collected in southwestern Kazakhstan (Bostankum sands, 25.v.2011, K. Nupponen & P. Gorbunov leg.). It is the first spring record of the species, and supports the hypothesis of imaginal aestivation.

The species shows remarkable individual variation in the colour of the forewing (Zilli et al. 2005). However, mottled specimens appear to be very rare at least in the Urals. During fourteen years, a total of 37 specimens were collected, and only four of them belong to f. *internigrata*, while 33 specimens are pale and rather unicolorous, showing only minor variation.

***Sidemia spilogramma* (Rambur, 1871)**

Bannovka 31.viii.2006 1♀; Chalk Hills 22.viii.2006 1♂; Kumak River 10.ix.2009 1♀, 11.ix.2009 4♂, 3♀; Pugatsev 2.ix.2002 1♀; Sorochinsk 23.viii.2006 1♂

Remarks. The habitat of *S. spilogramma* by the River Kumak is illustrated in Fig. 8.

*** *Amphipoea crinanensis* (Burrows, 1908)**

Moskovo 16.vii.2007 1♂; Uchaly 4.ix.2009 2♂

Remarks. The species has been reported from the western part of European Russia (Matov et al. 2008). The species was also found in Mary El republic and mid Volga region (K. Mikkola, pers. comm.), Petersen (1914) presented distributional range of

the species to Baikal and Tian-Shan, Guylai & Ronkay noted it from West Siberia, but these records require confirmation. New to the Ural region.

***Hydraecia osseola* (Staudinger, 1882)**

Ilovla 5.ix.2002 1♀; Kumak River 10.ix.2009 1♀; Olhovka 6.ix.2002 2♀; Pugatsev 2.ix.2002 3♂; 1.ix.2006 1♀

***Gortyna cervago* Eversmann, 1844**

Chalk Hills 5–9.x.2007 4 exx; Guberlja 9.ix.2009 1♂, 1♀; Guberlja Spring 8.ix.2009 1♀; Kamenka 12.ix.2009 4♂, 1♀; Kumak River 10–11.ix.2009 6♂, 4♀, 14.ix.2010 4♂

*** *Chortodes brevilinea* (Fenn, 1864)**

Verbljushka 22.viii.2007 1♀ (P. Gorbunov leg.)

*** *Phragmatiphila nexa* (Hübner, 1808)**

Guberlja Spring 7.ix.2009 1♀

Remarks. A western European species. Earlier records in Russia are restricted to the westernmost provinces (Matov et al. 2008). The present record is the easternmost one known. New to the Ural region.

***Sedina buettneri* (E. Hering, 1858)**

Guberlja Spring 7.ix.2009 1♂; Kamenka 12.ix.2009 2♀; Kumak River 10.ix.2009 1♀, 11.ix.2009 1♀

***Leucochlaena fallax* (Staudinger, 1870)**

Chalk Hills 22.viii.2006 1♂; Verbljushka 22.viii.2007 1♀ (P. Gorbunov leg.)

***Brachylomia uralensis* (Warren, 1910)**

Kumak River 10–11.ix.2009 about 80 exx

Remarks. The habitat of *B. uralensis* by the River Kumak is illustrated in Fig. 8.

*** *Conistra erythrocephala* (Denis & Schiffermüller, 1775)**

Chalk Hills 5–9.x.2007 18 exx; Orenburg 4.x.2007 1 ex; Verbljushka 3.x.2007 5 exx

***Lithophane ornitopus* (Hufnagel, 1766)**

Chalk Hills 7.x.2007 1♀; Orenburg SW 4.x.2007 1♀; Pugatsev N 01.ix.2006 2♂

***Pseudohadena arenacea* L. Ronkay, Varga & Fabian, 1995**

Kumak River 11.ix.2009 1♂, 6.ix.2011 1♂

Remarks. *P. arenacea* was recently reported as new to Europe (Nupponen & Fibiger 2006). The present records confirm that the species is resident in the southern Ural area. In 2009–2011, *P. arenacea* was also discovered in the Ustyurt Plateau and Emba River basin, western Kazakhstan (P. Gorbunov & K. Nupponen, unpublished). The habitat of *P. arenacea* by the River Kumak is illustrated in Fig. 8.



Fig. 7. Guberlja Spring, South Ural: A moist patch with plenty of *Phragmites*, surrounded by steppe hills. Habitat of *Fabula zollikoferi* (Photo: K. Nupponen).

***Pseudohadena schlumbergeri* Püngeler, 1905**

Bogdo 4.vi.2001 1♂ (GP 4125 MF)

Remarks. The specimen is illustrated in Fibiger & Hacker (2007). The habitats of *P. schlumbergeri* are semideserts and desert steppes (Fig. 2). In W Kazakhstan the species appears to be associated with sandy localities (K. Nupponen & P. Gorbunov, unpublished). New to Russia.

***Dasypolia timoi* Fibiger & K. Nupponen, 2006**

Chalk Hills 6.x.2007 1♂, 7.x.2007 5♂, 8.x.2007 8♂ 1♀, 9.x.2007 4♂, 10.x.2007 5♂

Remarks. In addition to the type series (2 exx; see Nupponen & Fibiger 2006) and the present topotypical material, the species is known by three old specimens from Karazhal, Karagandinskaja oblast, Central Kazakhstan (11.x.1937 2♀, 15.x.1937 1♂; coll ZISP). The adults and the genitalia of both sexes are illustrated in Fibiger et al. (2010: plate 15, figs 9, 10; genitalia figs 144, 319). The female genitalia in fig. 319 originate from a specimen from C Kazakhstan, not from South Ural.

*** *Polymixis trisignata* (Ménétriés, 1847)**

Kumar River 10.ix.2009 1♀, 11.ix.2009 2♂ 1♀

Remarks. The species is known from the South Urals by old records of Spuler (1908) from Orenburg and Zhuravlev (1910) from Uralsk (Kononenko 2005). The presence of the species in Ural is confirmed. In September 2011, several specimens of *P. trisig-*



Fig. 8. Steppe hills, rocky slopes and moist patches at sandy riverside by the River Kumak, South Ural. Habitat of *Fabula zollikoferi*, *Pseudohadena arenacea*, *Sidemia spilogramma*, *Brachylomia uralensis*, *Polymixis trisignata*, and *Nycteola eremostola* (Photo: K. Nupponen).

nata were collected in W Kazakhstan by Emba Village (K. Nupponen & P. Gorbunov, unpublished). The habitat of *P. trisignata* by the River Kumak is illustrated in Fig. 8.

***Polymixis rosinae* (Bohatsch, 1907)**

Chalk Hills 5.x.2007 3♂, 6.x.2007 1♂, 7.x.2007 3♂ 1♀, 8.x.2007 1♂, 9.x.2007 1♂

***Polymixis atossa* (Wiltshire, 1941)**

Chalk Hills 5.x.2007 1♂, 6.x.2007 3♂ 3♀, 7.x.2007 2♂

***Orthosia ella* (Butler, 1878)**

Moskovo 2.vi.2004 1♀

Remarks. Previous records of the species from the Urals are from the 1930s (Nupponen & Fibiger 2006; Fibiger et al. 2010).

***Saragossa siccanorum* (Staudinger, 1870)**

Bogdo 26–28.viii.2006; Burannoe 18–19.viii.2006; Chalk Hills 20–22.viii.2006; Peski Thikili 30.viii.2006; Sasykoli 29.viii.2006. Common.

***Mythimna alopecuri* (Boisduval, 1840)**

Frolovo 16–17.v.2005 20 exx; Olhovka 3–4.ix.2002 2♂ 1♀, 15.v.2005 4♂, 18.v.2005 44 exx

***Dichagyris latipennis* (Püngeler, 1909)**



Fig. 9. Rocky mountain tundra at upper slopes of Denetshkin Kamen, North Ural. Habitat of *Agrotis ruta* (Photo: K. Nupponen).

Sasykoli 29.viii.2006 3♂ 1♀ (Fig. 3)

Distribution. C and E Turkey, Russian Turkestan.

Remarks. Two of the European specimens are illustrated in Fibiger et al. (2010: plate 11, figs 50, 52). The habitat in Astrakhan oblast is a sandy desert with *Calligonum* and various Poaceae as dominant plants (Fig. 3). New to Russia and Europe.

***Dichagyris orientis* (Alphéraky, 1882)**

Bogdo 3.vi.2001 1♀, 4.vi.2001 1♀; Kizilskoye 30.v.2007 1♂ (P. Gorbunov leg.)

*** *Euxoa deserta* (Staudinger, 1870)**

Bogdo 26.viii.2006 3♂; Chalk Hills 22.viii.2006 1♂; Olhovka 7.ix.2002 1♂; Peski Tshikili 30.viii.2006 2♂

Remarks. The species inhabits semideserts and desert steppes in the Volgo-Ural region (Fig. 2). Population densities seem to be relatively low throughout its distribution.

***Euxoa fallax* (Eversmann, 1854)**

Bogdo 27.viii.2006 1♂, 28.viii.2006 1♂

Remarks. The species inhabits semideserts and desert steppes in Astrakhan oblast (Fig. 2).

***Euxoa dsheiron* Brandt, 1938**

Chalk Hills 22.viii.2006 1♂; Verbljushka 5–6.ix.2009 about 50 exx

***Agrotis characteristica* Alphéraky, 1892**

Chalk Hills 20–22.viii.2006 about 40 exx; Guberlja Spring 7.ix.2009 1♂; Verbljushka 22.viii.2007 1♀ (P. Gorbunov leg.)

***Agrotis ruta* (Eversmann, 1851)**

North Ural, 60°24–26′N 59°29–36′E, 1000–1250 m, Denetshkin Kamen, mountain tundra, 12.vii.2007 1 pupa, a male emerged 16.vii.2007

Remarks. The specimen is illustrated in Fibiger et al. (2010: pl. 10, fig. 8). The specimens from northern Ural and Siberia are similar in the external appearance. The habitat of *A. ruta* in northern Ural is mountain tundra, and the species prefers xerothermic gravelly patches (Fig. 9). In the isolated mountain tundra region of the southern Urals, *A. ruta* is replaced by its sister species *A. iremeli* K. Nupponen, Ahola & Kullberg, 2001, which is a southern Uralian endemic. For further notes on *A. iremeli*, see Nupponen et al. (2001), Nupponen & Fibiger (2002) and Fibiger et al. (2010).

*** *Agrotis clavis* (Hufnagel, 1766)**

Tavatui 1–7.viii.2006 1♀ (V. Olschwang leg.)

Remarks. This is the first confirmed record of *A. clavis* in the Urals. The species is often confused with a closely related *A. frater* Fibiger, Ahola & K. Nupponen, 2006, which is not rare in steppe regions of the southern Urals. The study of the distribution of this pair of species in Asia is highly desirable.

*** *Pseudohermonassa melancholica* (Lederer, 1853)**

Ekaterinburg 30.VII–11.viii.2005 1♂; Moskovo 4.viii.2000 1♂ (T. Nupponen leg.), 16.viii.2006 5♂, 16.vii.2007 1♂, 17.vii.2007 2♂

Distribution. Widely distributed in the Asian part of Russia, from western Siberia to the Far East.

Remarks. The western boundary of this species distribution is in the Urals. New to Europe. One of the specimens from southern Ural is illustrated in Fibiger et al. (2010): pl. 12, fig. 43; due to transition of rows, the collecting data of the specimen are presented in fig. 44 in the illustration text (p. 300).

*** *Spaelotis deplorata* (Staudinger, 1897)**

Moskovo 16.vii.2007 1♀ (Genitalia slide: K. Nupponen prep. no. 2/24.i.2010).

Remarks. Earlier reports of *S. deplotata* in Europe are based on misidentifications (Fibiger 1993; Nupponen & Fibiger 2002; Fibiger & Hacker 2005). New to Europe. The specimen from southern Ural is illustrated in Fibiger et al. (2010: pl. 12, fig. 48); due to transition of rows, the collecting data of the specimen are presented in fig. 49 in the illustration text (p. 300).

***Graphipora augur* (Fabricius, 1775)**

Iremel 19.vii.2007 1♂; Miass 16–19.vii.2007 1♂



Fig. 10. *Xestia albonigra* (Kononenko, 1981); North Ural, Denetshkin Kamen, (N slope) 11.vii.2007, K. Nupponen leg.

***Xestia sareptana* (Herrich-Schäffer, 1851)**

Olhovka 3.ix.2002 1♀, 4.ix.2002 2♂ 2♀, 6.ix.2002 1♂ 1♀, 25.viii.2006 1♀

Remarks. The type locality of the species is Sarepta (Volgograd oblast). However, the present records are the first ones from the region since the beginning of the 1900s. The habitat is a luxuriant, bushy area between calcareous hills and moist meadows. One of the specimens from Olhovka is illustrated in Fibiger et al. (2010: pl. 12, fig. 50); due to transition of rows, the collecting data of the specimen are presented in fig. 51 in the illustration text (p. 300).

***Xestia trifida* (Fischer v. Waldheim, 1820)**

Bannovka 31.viii.2006 about 70 exx; Olhovka 7.ix.2002 10♂; Pugatsev 1.ix.2006 1♂

Remarks. Locally the species is not rare in the Lower Volga region. The northern boundary of its distribution is in the Middle Volga, and the species has never been recorded in the southern Urals.

***Xestia subgrisea* (Staudinger, 1897)**

North Ural, 60°28'N 59°40'E, 260 m, Denetshkin Kamen (N slope) 13.vii.2007 1♂

Remarks. The specimen is illustrated in Fibiger et al. (2010: pl. 13, fig. 10). The habitat is a taiga forest (Figs 4, 5).

***Xestia kollari* (Lederer, 1853)**

Moskovo 16.vii.2007 1♂

***Xestia laetabilis* (Zetterstedt, [1839])**

North Ural, 60°28'N 59°40'E, 260 m, Denetshkin Kamen (N slope) 12.vii.2007 1♂

***Xestia albonigra* (Kononenko, 1981)**

North Ural, 60°28'N 59°40'E, 260 m, Denetshkin Kamen (N slope) 11.vii.2007 1♂

Distribution. Baikal region, Far East (Amur, Khabarovsk and Primoriye territories), Sakhalin, N Korea, N China (Kononenko 2005); Krasnoyarsk terr. (Kononenko, pers. comm.).

Remarks. This eastern Palaearctic species was surprisingly found in North Ural, about 3000 km to the west from nearest known records. The habitat is a taiga forest (Figs 4, 5). New to Europe. The specimen from North Ural (Fig. 10) is illustrated in Fibiger et al. (2010: pl.13, fig. 11); due to transition of rows, the collecting data of the specimen are presented in fig. 15 in the illustration text (p. 302).

***Xestia sincera* (Herrich-Schäffer, 1851)**

Iremel 18.vii.2007 1♀

Discussion

During 2006–2010, fourteen additional species of Bombycoidea and Noctuoidea were recorded for the southern Ural Mountains. The fauna of the southern Urals is moderately well known, and differs significantly from that of the Lower Volga region. The distributions of many species occurring in southern semideserts reach the Lower Volga region and the vicinity of Volgograd (formerly known as Sarepta) in the north, but not the southern Urals.

The Lepidoptera fauna in the northern half of the Ural Mountains is poorly known. It is difficult to reach collecting localities in the region, because roads are mainly in a bad condition or even absent, and it is not so easy to walk kilometers in virgin taiga forests. However, the distributions of several taiga species, to date considered to be restricted to the Eastern Palaearctic region, extend westwards to the Urals along the Siberian taiga and arctic tundra regions. *Pararctia tundrana*, *Xestia albonigra*, and a geometrid moth *Leucobrepheos middendorfi* (Ménétriés, 1858) are good examples of such species.

Acknowledgements

We thank Vladimir Olschwang and Pavel Gorbunov (Ekaterinburg, Russia) for organizing the expeditions and providing material from local collectors. Our thanks are also due to the following persons for various types of help during the trips and/or preparing the present article: Alexander Ermakov (Ekaterinburg,

Russia), Mariann Fibiger (Sorø, Denmark), Vladimir Kononenko (Vladivostok, Russia), Sergey Kornev (Orenburg, Russia), Alexander Lagunov (Miass, Russia), Alexander Malozemov (Ekaterinburg, Russia), Aleksey Matov (St. Petersburg, Russia), Elena Nupponen and Timo Nupponen (Espoo, Finland), as well as Kimmo Silvonen (Espoo, Finland) for his help in processing photographs of the imagos, and Faunatica Oy for supporting this work. Finally, I am greatly indebted to the late Michael Fibiger for fruitful co-operation over the last fifteen years, which resulted in three joint articles of the Noctuoidea of the Urals.

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